Close Main and Unit Valves Prior to Blowdown

NaturalGas EPA POLLUTION PREVENTER

Partner Reported Opportunities (PROs) for Reducing Methane Emissions

PRO Fact Sheet No. 603

Applicable sector(s):

☐ Production ☐ Processing ■ Transmission and Distribution

Partners reporting this PRO: El Paso Natural Gas Company

Other related PROs: Inject Blowdown Gas into Low Pressure Mains, Install Flares, Design Isolation Valves to Minimize Gas Blowdown Volumes

Compressors/Engines	☐
Dehydrators	☐
Pipelines	☐
Pneumatics/Controls	☐
Tanks	☐
Valves	■
Wells	☐
Other	☐

Technology/Practice Overview

Description

When compressor station equipment or facilities are taken out of service for operational and/or maintenance purposes, a common practice is to close the main valves and vent the natural gas between them to the atmosphere. A partner reported reducing methane emissions due to pipe manifold blowdowns through a revision in their operating practice.

The operational improvement involves closing the main and unit valves prior to blowing down sections of isolated equipment. Due to the proximity of unit valves to the equipment of interest, this practice has resulted in significant gas savings due to pipeline blowdowns.

Operating Requirements

Some valves may require manual closing/opening.

Applicability

This option is applicable at all compressor stations.

Methane Savings: 4,500 Mcf per year

Costs

Capital Costs (including installation)

■ <$1,000 ☐ $1,000 – $10,000 ☐ >$10,000

Operating and Maintenance Costs (annual)

☐ <$100 ■ $100-$1,000 ☐ >$1,000

Payback (Years)

■ 0–1 ☐ 1–3 ☐ 3–10 ☐ >10

Benefits

Reducing methane emissions was a primary justification for the project.

Methane Emissions Reductions

Methane emissions occur due to the venting of high pressure equipment, large volume vessels, or pipeline segments to the atmosphere during routine or emergency maintenance and service. One partner has reported methane reductions of nearly 9 MMcf for one year.

Economic Analysis

Basis for Costs and Savings

Methane emissions reductions of 4,500 Mcf per year are associated with manually closing the main and unit valves at one compressor station. This practice is assumed to be performed four times per year based on the gas loss in 1 mile of 24 inch pipeline at 900 psia.

Discussion

This practice has a quick payback. This change in operating practice requires no additional capital costs. Operational costs are associated with deploying two workers and a vehicle per event for one full day to open and close the valves.